

CLAIMS

What is claimed is:

- 1 1. A tool control system comprising:
2 a pneumatic source;
3 a vacuum source;
4 a control mechanism coupled to the pneumatic source, to the vacuum source,
5 to a supply hose, and to a pilot hose, wherein the supply hose and the pilot hose are
6 to couple to a tool, wherein the control mechanism is to provide vacuum to the
7 supply hose when air within the pilot hose has greater than a predetermined
8 pressure, and wherein the control mechanism is to provide air pressure to the supply
9 hose when air within the pilot hose has less than the predetermined pressure.

- 1 2. The tool control system recited in claim 1, wherein the control mechanism
2 comprises:
3 a limit valve coupled to the pneumatic source and to the pilot hose; and
4 a reversing valve coupled to the limit valve, to the vacuum source, to the
5 pneumatic source, and to the supply hose.

- 1 3. The tool control system recited in claim 2, wherein the limit valve is to
2 couple the reversing valve to the vacuum source when air within the pilot hose has
3 greater than the predetermined pressure, and wherein the limit valve is to couple the
4 reversing valve to the pneumatic source when air within the pilot hose has less than
5 the predetermined pressure.

1 4. A system comprising:
2 an air source;
3 a vacuum source; and
4 a control mechanism coupled to the air source and to the vacuum source,
5 wherein the air source and the vacuum source are to couple to a tool comprising a
6 first actuation element and a second actuation element, wherein the control
7 mechanism is to provide vacuum to the tool when fewer than both actuation
8 elements are actuated, and wherein the control mechanism is to provide air pressure
9 to the tool when both actuation elements are actuated.

1 5. The system recited in claim 4, and further comprising:
2 a supply hose selectively coupleable to the air source or to the vacuum
3 source; and
4 a pilot hose coupled to the first and second actuation elements,
5 wherein the supply hose and the pilot hose are to couple to the tool.

1 6. The system recited in claim 5, wherein the control mechanism is to provide
2 vacuum to the supply hose when air within the pilot hose has greater than a
3 predetermined pressure, and wherein the control mechanism is to provide air
4 pressure to the supply hose when air within the pilot hose has less than the
5 predetermined pressure.

1 7 The system recited in claim 5, wherein the control mechanism comprises:
2 a limit valve coupled to the air source and to the pilot hose; and
3 a reversing valve coupled to the limit valve, to the vacuum source, to the air
4 source, and to the supply hose.

1 8. The system recited in claim 7, wherein the limit valve is to couple the
2 reversing valve to the vacuum source when air within the pilot hose has greater than
3 the predetermined pressure, and wherein the limit valve is to couple the reversing
4 valve to the air source when air within the pilot hose has less than the predetermined
5 pressure.

1 9. A system comprising:
2 an air source;
3 a vacuum source;
4 a control mechanism coupled to the air source and to the vacuum source,
5 wherein the control mechanism is to couple to a tool comprising a first actuation
6 element and a second actuation element; and
7 a pilot hose coupled to the control mechanism, wherein air within the pilot
8 hose has less than a predetermined pressure when fewer than both actuation
9 elements are actuated, and wherein air within the pilot hose has greater than a
10 predetermined pressure when both actuation elements are actuated.

1 10. The system recited in claim 9, and further comprising:
2 a supply hose selectively coupleable to the air source or to the vacuum
3 source;
4 wherein the supply hose and the pilot hose are to couple to the tool.

1 11. The system recited in claim 10, wherein the control mechanism is to provide
2 vacuum to the supply hose when air within the pilot hose has greater than a
3 predetermined pressure, and wherein the control mechanism is to provide air
4 pressure to the supply hose when air within the pilot hose has less than the
5 predetermined pressure.

1 12. The system recited in claim 10, wherein the control mechanism comprises:
2 a limit valve coupled to the air source and to the pilot hose; and
3 a reversing valve coupled to the limit valve, to the vacuum source, to the air
4 source, and to the supply hose.

1 13. The system recited in claim 12, wherein the limit valve is to couple the
2 reversing valve to the vacuum source when air within the pilot hose has greater than
3 the predetermined pressure, and wherein the limit valve is to couple the reversing
4 valve to the air source when air within the pilot hose has less than the predetermined
5 pressure.

1 14. A method comprising:
2 providing a tool having a primary hammer, a secondary hammer, a
3 propulsion element, a nose, and an actuation element;
4 positioning a fastener in the nose; and
5 actuating the actuation element to activate the propulsion element, the
6 propulsion element moving the primary hammer to strike the secondary hammer,
7 causing the secondary hammer to drive the fastener.

1 15. The method recited in claim 14 wherein, in providing, the primary hammer
2 has more mass than the secondary hammer.

1 16. The method recited in claim 14 and further comprising:
2 providing an additional actuation element; and
3 activating the propulsion element only when both the actuation element and
4 the additional actuation element are actuated.

1 17. The method recited in claim 14, wherein the additional actuation element is
2 actuated when the nose is depressed.

1 18. The method recited in claim 14, wherein the tool further comprises a vacuum
2 element to provide vacuum, the method further comprising:
using vacuum to retract the primary hammer after the fastener is driven.

1 19. The method recited in claim 18, wherein the nose has a channel to hold the
2 fastener, the method further comprising:
3 using vacuum to retain the fastener in the channel prior to actuating the
4 actuation element.

1 20. The method recited in claim 14, wherein the fastener is driven without
2 causing an appreciable reactive force upon the tool in a direction opposite to that in
3 which the fastener is driven.